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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/867,966 | 05/29/2001 | Fang Wu | CISCP219 | 9757 |

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EXAMINER

SHERALI, ISHRAT I

ART UNIT PAPER NUMBER

2621

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/867,966

Applicant(s)

WU ET AL

Examiner

Sherali Ishrat

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-20, 22-29, 31-44, 46, 47 and 49 is/are rejected.
- 7) ☒ Claim(s) 6, 21, 30, 45, 48 and 50 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/02/2005 has been entered.

Applicant's arguments are fully considered however they are not persuasive with respect to art rejection. See the remarks section for detailed discussion.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-4, 7-11, 13-14, 16-17, 19-20, 22-25, 27-28, 31-34, 36-37, 39-40, 42-43 and 46-47 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu (US 5,907,374) in view of Barrett et al.(US 6,412,112).

Regarding claim 1, Liu discloses identifying transform coefficients representing video content in a frame or a portion of frame of the video bitstream (col. 2 line 64-col. 4 lines, 19, especially col. 4 lines 1-19); and

filtering selected transform coefficients from the video bitstream to thereby reduce the bit rate of the video bitstream (col. 9 lines 34-45, col. 15 lines 3-15 and col. 11 lines 9-44, note that filtering can produce modified bitstream that provides the conversion/reduction of bit rate "filtering block of DCT coefficients").

Liu does not explicitly mention the reduced bit rate meets the bandwidth constraint, and before the filtering the video stream does not meet the constraint but does meet the constraint after filtering.

Barrett, in an analogous environment, discloses the reduced bit rate meets the bandwidth constraint, and before the filtering the video stream does not meet the constraint but does meet the constraint after filtering (col. 8 lines 1-24, note that Barrett tailors the bandwidth to required one).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the features of Barrett in the system of Liu in order to improve the efficiency of the image encoded and transmission (Barrett, col. 8).

Regarding claim 3, Liu discloses a filter (col. 9 lines 34-40).

Regarding claim 7, Liu r discloses the filter can be altered on a per block basis and thus, the coefficients can be filtered differentially on a per block or a per macroblock basis (col. 9 lines 27-52, note that it is inherent because of DCT blocks).

Regarding claim 8, Liu discloses identifying transform coefficients associated with an input bitstream (col. 4, lines 1 - 19);

selecting transform coefficients for filtering to provide modified transform coefficients (col. 15m, lines 3-15 and col. 11, lines 9-44); and

generating output bitstream, the output bitstream associated with modified transform coefficients uses less bandwidth than the input bitstream associated with the transform coefficients (fig. 3, col. 1 lines 12-20. col. 3, lines 18-48, col. 11, lines 39-col. 12 line 65, note that the purpose of the modified bitstream coefficients are used to generate output bitstream with conserved bandwidth).

Liu does not explicitly mention the coefficients associated with the bit-stream are selected differentially based on a per block or per macro-block basis.

Barrett, in an analogous environment, discloses selecting the coefficients to be filtered based on block basis (col. 8 lines 13-38, note that the DCT uses blocks and thus, selecting coefficients to be filtered according to the comparison of the blocks). Analogous argument is addressed with regard to the claim 1 .

Regarding claim 9, Liu discloses using VL decoding on the input bit-stream (fig. 3 , block 205).

Regarding claim 10, Liu further discloses identifying transform coefficients comprises acquiring the coefficients from a file (fig. 3, col. 9 lines 15-25).

Regarding claims 11 and 13, Liu discloses DCT coefficients (Fig. 3, col. 9, lines 35-45).

Regarding claim 14, Liu discloses VLC (Fig. 3, Block 305).

Art Unit: 2621

Regarding claim 16, Liu discloses selecting a filter (col. 9 lines 34-39 and col.15, lines 3-18).

Regarding claim 17, discussions are addressed with regard to claim 7.

Regarding claim 22-25, 27-28, 31-34, 36-37, 39-40, 42-43 and 46 the claims are the corresponding apparatus and computer readable medium claims to claims 1, 3, 7, 8-11, 13-14 and 16-17. The discussions are addressed with regard to claims 1, 3, 7, 8-11, 13-14 and 16-17.

Regarding claims 4, 19-20, Liu discloses a DCT coefficient scanning and special filtering but does not explicitly mention zero/one filter, 8X8 filters, and one dimensional filters.

Zero/one filter, 8X8 filters, and one dimensional filters are well known in the art and the use specific filter is a design choice.

Regarding claim 47 and 49, Liu discloses rate controller that provides rate control information of block of video data (col. 14, lines 32-40, the buffer occupancy controller controlling quantizing step sizes to ensure encoder does not overflow which corresponds to rate controller).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use these filter in the system of Liu in order to expand the applicability of the system of Liu and improve the efficiency of the image encoding.

4. Claims 2, 5, 15, 18, 26, 29, 38, 41, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu in view of Barrett et al and further in view of Strongin US (US 6,002,801).

Art Unit: 2621

Regarding claims 2, 5, 15, 18, 26, 29, 38, 41 and 44, Liu does not explicitly teach the cut-off threshold and threshold filtering.

Strongin, in an analogous environment, discloses the threshold with filtering (col. 7, lines 54-60, note that any altering pixel coefficients is considered as filtering)

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the features of Strongin in the system of Liu in order to improve the efficiency of the image encoding and transmission (Strongin, col. 3).

5. Claims 12, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu in view of Barrett and further in view of Koike et al. (US 6,661,923).

Regarding claims 12 and 35, Liu does not explicitly mention DCT on audio data. Koike, in an analogous environment, discloses the DCT operation on audio data (col. 6 lines 49-50).

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the features of Koike in the system of Liu in order to improve the efficiency of the multimedia data encoding and transmission.

Allowable Subject Matter

6. Claims 6, 21, 30, 45, 48 and 50 are objected as being dependent on rejected claim but would be allowable if rewritten in independent form including limitations of the base claim and any intervening claims.

Remarks

7. In the applicant's amendment and arguments filed on 12/22/2005. Applicant argued the following:

References to Liu and Barrett are not combinable. They teaches away from each other.

Examiner strongly disagree with Applicant's assumption that the references to Liu and Barrett are not combinable. Both reference teach MPEG compression in which both uses DCT coefficients and both reference are processing the DCT coefficients. Liu in col. 9, lines 35-45, discloses filtering block of DCT coefficients which is obviously is to perform reduce the amount of DCT coefficients. Barrett in figures 5 and 9 MPEG compression in which video bit-stream is made up of DCT coefficients. Barrett in col. 8 lines 1-24, states "selecting the number coefficients and levels used to encode the data (filtering). Bandwidth required for the MPEG scales directly with the number of coefficients used". This corresponds to video stream does not meet the bandwidth constraint but does meet the constraint after filtering tailors the bandwidth to required one. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the features of Barrett in the system of Liu in order to improve the efficiency of the image encoding and transmission (Barrett, col. 8).

Communication

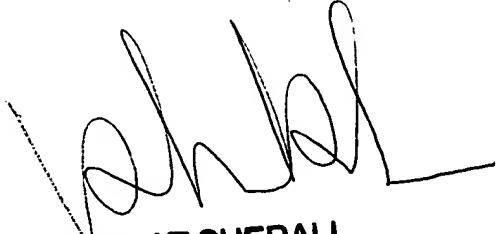
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sherali Ishrat whose telephone number is 571-272-7398. The examiner can normally be reached on 8:00 AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ishrat Sherali

February 10, 2006



ISHRAT SHERALI
PATENT EXAMINER
ARTUNIT 2621